

REMARKS

Upon entry of this Amendment, claims 1-25 will be pending in this application.

Claims 1 and 2 have been amended solely for clarifying the claim language without the intention of narrowing the scope of those claims. Claims 10-17 have been withdrawn from consideration. Claims 18-25 have been added. No new matter has been introduced.

Claim Rejections – 35 U.S.C. § 112

Claims 2 and 3 have been rejected under 35 U.S.C. § 112, second paragraph.

The Applicant has amended claim 2 to further clarify the claim language. Claim 2 now recites, *inter-alia*, “wherein the first temperature control device controls the temperature of the slot electrode to be in a predetermined temperature range so as to substantially eliminate influence of water released from components in the process chamber on a substrate being processed.” Therefore, the Applicant respectfully submits that the pending claims are in full compliance with 35 U.S.C. § 112.

Claim Rejections – 35 U.S.C. § 102

Claims 1, 2, and 4-7 have been rejected under 35 U.S.C. § 102 (b) as being anticipated by Ishii *et al.* (U.S. Pat. No. 5,698,036). The Applicant respectfully traverses this rejection for at least the following reasons.

Claim 1 has been amended to recite, *inter-alia*, “a first temperature control device constructed and arranged to control a temperature of at least one of the slot electrode and component parts including the wavelength reducing member provided in the vicinity of the slot electrode within a predetermined range of temperatures.” In the invention as recited in claim 1, the temperature control device controls the temperature of wavelength reducing member and the slot electrode in a predetermined range of temperatures. By controlling the temperature of the wavelength reducing member and the slot electrode, the length of each slit formed in the slot electrode can be maintained at a predetermined length, thereby generating a plasma within the process chamber with a uniform density. In addition, controlling the temperature of the slot electrode during processing allows eliminating of the problem of overheating of the electrode which is due to the heat that may be generated by the transmission of the plasma through the slot electrode.

In contrast, the cooling fins 84, cooling fans or cooling jacket in Ishii *et al.* are merely used to cool the flat antenna member 44 through dielectric material 80 by heat discharge to atmosphere (see, col. 11 lines 54-60 and col. 12, lines 17-26 of Ishii *et al.*)

Consequently, Ishii *et al.* does not disclose or suggest controlling the temperature of the slot electrode and component parts including the wavelength reducing member in a predetermined range of temperatures.

Therefore, the Applicant respectfully submits that claim 1, and claims 2, 4-7 which depend from claim 1, are patentable and respectfully requests that the rejection of claims 1, 2, and 4-7 under § 102 be withdrawn.

Claim Rejections – 35 U.S.C. § 103

Claim 3 has been rejected under 35 U.S.C. § 103 (a) as being unpatentable over Ishii *et al.* The Applicant respectfully traverses this rejection for at least the following reasons.

Claim 3 is indirectly dependent from patentable claim 1. Therefore, the Applicant respectfully submits that claim 3 is patentable for at least the reason that it contains all the limitations of claim 1. Moreover, claim 3 recites a range of temperatures (between 60°C and 80°C) not disclosed or suggested in Ishii *et al.* Ishii *et al.* does not disclose or suggest a predetermined temperature within a temperature range. Therefore, the Applicant respectfully submits that claim 3 is patentable and respectfully requests that the § 103 rejection of claim 3 be withdrawn.

Claim 8 has been rejected under 35 U.S.C. § 103 (a) as being unpatentable over Ishii *et al* in view of Yamazaki (Japanese Patent Publication 10-060657). The Applicant respectfully traverses this rejection for at least the following reasons.

Claim 8 is indirectly dependent from patentable claim 1. Therefore, the Applicant respectfully submits that claim 8 is patentable for at least the reason that it contains all the limitations of claim 1. Moreover, the Examiner concedes that Ishii *et al.* fails to teach a third temperature control device controlling a temperature of the periphery of the dielectric material member. The Examiner contends that Yamazaki teaches a microwave plasma apparatus which supplies a cooling gas between top plate 31 and dielectric substance window 30. The examiner characterizes the cooling gas as a third temperature control device. However, a cooling gas is not a “device”. Moreover, the cooling gas is introduced through a section in plate 31 onto the top of dielectric substance window 30. Consequently, Yamazaki

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does not disclose or suggest a controlling device controlling a temperature of a periphery of the dielectric material member. Therefore, the Applicant respectfully submits that claim 8 is patentable and respectfully requests that the § 103 rejection of claim 8 be withdrawn.

Claim 9 has been rejected under 35 U.S.C. § 103 (a) as being unpatentable over Ishii *et al.* in view of Yamazaki (Japanese Patent Publication 01-036985). The Applicant respectfully traverses this rejection for at least the following reasons.

Claim 9 is dependent from patentable claim 1. Therefore, the Applicant respectfully submits that claim 9 is patentable for at least the reason that it contains all the limitations of claim 1. Moreover, the Examiner concedes that Ishii *et al.* fails to show the temperature control arrangement for controlling the temperature of the side wall. Therefore, the Applicant respectfully submits that claim 9 is patentable and respectfully requests that the § 103 rejection of claim 9 be withdrawn.

Claims 18-25 are newly added. Support for the claim language may be found throughout the specification, for example, in the detailed description. Claims 18-25 are directly or indirectly dependent from claim 1. Claims 18-25 are, therefore, patentable for at least the reason that they contain all the limitations of claim 1. Therefore, the Applicant respectfully submits that claims 18-25 are patentable.

CONCLUSION

In view of the foregoing, the claims are now believed to be in form for allowance, and such action is hereby solicited. If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, he is kindly requested to contact the undersigned at the telephone number listed below.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached Appendix is captioned "Version with markings to show changes made".

All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,
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Enclosure: Appendix

APPENDIX

version with markings to show changes made

IN THE CLAIMS

The claims have been amended as follows:

1. (Amended) A microwave plasma processing apparatus comprising:
a wavelength reducing member constructed and arranged to reduce [reducing] a wavelength of a microwave transmitted therethrough;
a slot electrode guiding the microwave exiting the wavelength reducing member, the slot electrode provided adjacent to the wavelength reducing member;
a first temperature control device constructed and arranged to control [controlling] a temperature of at least one of the slot electrode and component parts including the wavelength reducing member provided in the vicinity of the slot electrode within a predetermined range of temperatures; and
a process chamber into which the microwave exiting the slot electrode is introduced so that a plasma is generated by the microwave within the process chamber.

2. (Amended) The microwave plasma processing apparatus as claimed in claim 1, wherein the first temperature control device controls the temperature of the slot electrode to be in a predetermined temperature range so as [to promote a water component being] to substantially eliminate influence of water released from [other] components in the process chamber on a substrate being processed.

End of Appendix